

# CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society  
Of America

Vol. XIX

MAY, 1947

No. 5



FIG. 40. *Pervocereus setosus* sp. nov. Akers.



## CACTUS AND SUCCULENT JOURNAL

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## CONVENTION NOTES

By the time the next issue of the JOURNAL reaches you the second biennial convention of the Society will be so close that you will have little time to secure your reservations, therefore this is almost your last reminder.

Who may attend? Each of our affiliated groups has been asked to appoint a delegate and alternate to represent it at the convention. In addition every member of the Society is invited to be present and to take part in the discussions and voting. Members are privileged to bring guests with them and such guests may attend all of the meetings and social events, but they cannot vote.

When and where? Cincinnati, Ohio, June 26, 27, and 28. The Sinton Hotel is headquarters for the convention and most of the events will center at the hotel.

What are the hotel rates? Single rooms, \$3 to \$6 per day. Double bed for two, \$5 to \$8 per day. Twin beds, \$6 to \$10 per day. Suites, \$10 to \$20 per day. Every room with bath or shower. Reservations can be made by writing W. Taylor Marshall, Box 647, Tempe, Arizona.

What is the cost of the events? A luncheon will be served on Thursday, June 26th, at Eden Park and on Friday, June 27th, at the Sinton Hotel. Sandwiches and coffee on Saturday noon in Eden Park. The closing banquet will be served at the hotel on Saturday evening at 7. All of these events and all of the talks and exhibits are covered by a ticket costing 7.50 which can be purchased at the time of registration on June 26th on the balcony of the Sinton Hotel from 9 to 11 a.m. Tickets for the banquet are \$3.50.

How many will attend? Our first convention was attended by 125 members and delegates. Our membership has doubled since then so we can reasonably expect at least 250 to attend this one.

What programs have been arranged? In addition to the luncheons and banquet we will have the photographic exhibit in the lobby of the Sinton Hotel for all three days and some of the best photographers in the business are entered. The Commercial Association will stage a beautiful exhibit under the direction of Howard E. Gates, whose showmanship is well known. All of our members are invited to send entries to the Cactus Show that will be staged in the Krohn Conservatory in Eden Park on Saturday, June 28th. Illustrated lectures by such well known authorities as Dr. Elzada Clover, just back from seven months in Guatemala; Lad Cutak of the Missouri Botanical Garden, just back from a Mexican trip; John E. Rodgers, columnist of the JOURNAL; Laval Goulet,

who grows succulents near the Arctic Circle; W. Taylor Marshall, Director of the Desert Botanical Garden in Arizona, who will show kodachromes of the garden made by the internationally famous R. C. Proctor and other top notch photographers; and other surprise speakers.

A beautiful souvenir coin attached to the identification pin of the convention has been presented by our life member, John Haag of the Cactus and Succulent Conservatory of St. Paul, Minn.

In a letter just received from Charles R. Cole, Chairman of the Cincinnati committee in charge of the convention, he advises us that plans are complete and "even better than we had hoped for."

## CONTROL FOR APHIDS

By Agricultural Extension Service, Los Angeles County

People of this world are always seeking some record—trying to have the biggest of this, or the smallest of that, or the most of something else. Maybe we have another record. While nobody has counted the aphids either this year or any other year, the number that are on everything this year might well constitute a record.

The best control for aphids is nicotine sulphate, better known as Black Leaf 40. It is scarce and impossible to get in large quantities for commercial use, but manufacturers are putting up small bottles containing one to four ounces for retail sale. They are on drug-store and nursery supply shelves quite generally.

One teaspoonful of nicotine sulphate, or Black Leaf 40, to a gallon of water (1-800) plus a little soap or one of the detergents (soapless soaps) will make a spray that will kill most aphids. Some of the very large kinds, particularly when they are fully mature, may need a 1-600—use one and one-half teaspoonfuls to a gallon.

There are other materials which are not as effective as nicotine sulphate, but which if used when the aphids are small will do a good job. Probably the best substitutes are rotenone or pyrethrum. DDT will kill some aphids, but it also will kill the insects that eat aphids. Therefore, when the aphids come back for a second attack the field is wide open and they really go to town. For this reason DDT is not satisfactory.

The secret of control is not only to have the right material, but to apply it thoroughly. Because aphids are sucking insects, the spray or dust has to actually hit them. Do a good job when you apply the material. It is particularly important to kill the winged aphids. They are the "stem mothers" and are flying in large numbers now. You may have to spray once a week because a new crop will come right in and take over.

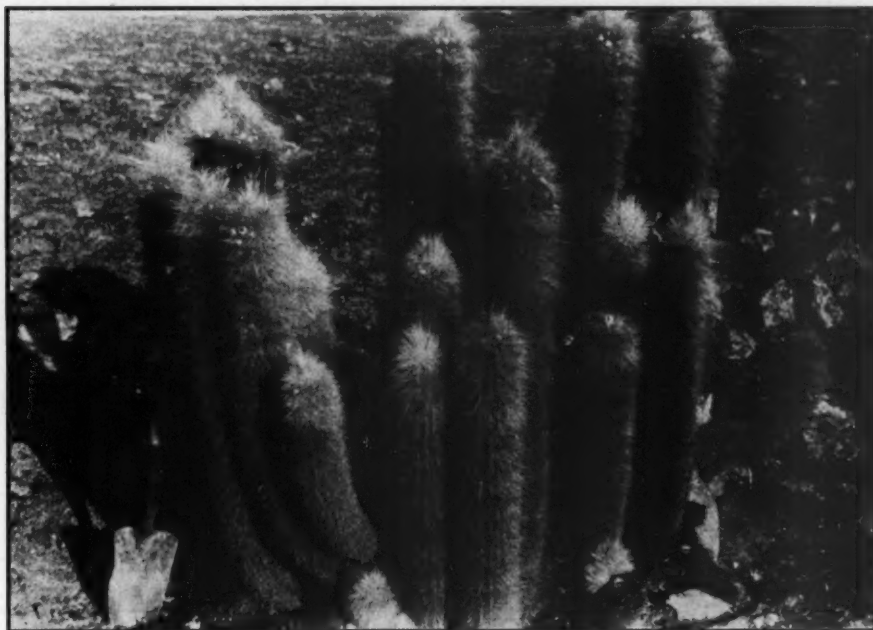


FIG. 41. *Peruvocereus setosus* sp. nov. from Caracoles Hills, Peruvian Andes.

## New Genus and New Species from Peru

By JOHN AKERS

### *Peruvocereus* gen. nov.

Plantae columnares 1-3 m. altae ad basem versus ramosae. Areolae conspicuae dense tomentosae spinas vel setas numerosas gerentes vel dense lanatae. Flores diurnales laterales vel terminales solitarii anguste infundibuliformes corollae segmenta tubo squamato superantia squamis anguste ovato-lanceolatis, axillis squamarum dense lanatis. Corollae segmenta rotata segmentibus exterioribus reflexis albis viridibus roseis vel atrorubris. Stamina numerosa inclusa. Ovarium squamatum axillis squamarum lanatis. Fructus elongato-globosus vel globosus viridis rosaceus vel ruber indehiscens. Semines parvi nigri lucidi punctati. Radices lignei, cortice squamato.

Columnar plants that branch from the base and reach a height of from less than 1 to over 3 meters; ribs low and numerous (over 20) with conspicuous, felted areoles; areoles replete with acicular spines, bristles and or hairs (about 80); usually one or more acicular, pungent, central spine; some species being spiny, others bristly and still others hairy or woolly; flowers solitary and produced mainly from the top of

the stems but may be produced from anywhere along the stems, from a lateral pseudocephalium, or from a central pseudocephalium; flowers diurnal, opening in the afternoon of one day and closing in the morning of the next day; flowers narrowly funnelform with the tube longer than the limb; the limb expanded and rotate and the outer perianth segments much reflexed; the limb averages about 4 cm. long; the perianth varies in color from white, green, pink, cinnabar to garnet; stamens numerous and included, but the style may be slightly exerted; flower tube with long, narrow, elevated scales tipped with minute thorns and have numerous whitish, silky hairs in their axils; ovary scaly and hairy; fruits elongated, globose, or sub-globose with persistent floral remains; fruits about the size of a small hen's egg, with small, distant scales that have silky hairs in their axils; color varies from greenish to pink and red and the pulp is white, translucent, slightly acidic, edible and tasteless; fruits usually indehiscent and fall from the plants when ripe; seeds small, black, somewhat shiny and punctate; roots coarse, long and woody with loose, scaly bark.

Type species: *Peruvocereus salmonoides*.

Habitat: Ravines and hillsides on the western slopes of the Peruvian Andes.

There has existed and still exists considerable confusion concerning these beautiful Peruvian Cerei. Curt Backeberg erected a new genus *Haageocereus* which included both Britton & Rose's genus *Binghamia* as well as some of these new, day-blooming, colored-flowered plants.

*Peruvocereus* sp. nov. is readily distinguished from *Binghamia* by its colored, diurnal, narrowly funnelliform flowers, while the flowers of *Binghamia* are nearly salverform in shape, and have a limb that is two to three times the diameter of that of *Peruvocereus*. The latter is also distinguished by the presence of bristles, hairs or wool at the areoles, whereas *Binghamia* is mainly spiny. The spines and bristles of *Peruvocereus* are much more profuse and often hide the body of the plants.

This new genus includes several species with rather divergent characteristics and could be split into other genera, such as those flowering from a lateral pseudocephalium have shorter tubes and smaller fruits. At the present time, I believe it is better to leave them all in one common genus.

Some of the Peruvocerei are very excellent bloomers and produce their colorful flowers all summer long (December, January, February, March and April), but the majority are rather sparse bloomers, being content if they produce a half dozen or less flowers a season. The genus includes some of the most beautiful cacti in the subtribe CEREANAE B. & R., and they make wonderful additions to any cactus collection. The soft, colorful spines and bristles in shades of white, cream, yellow, gold and red make these plants exceedingly beautiful.

They all inhabit the hotter and drier zones in the foothill districts at the base of the Peruvian Andes. They grow at elevations of from 1,000 to 6,000 feet. The stems contract to nearly one-half their normal diameter during the dry season and the spines and bristles lose much of their bright colors. The species of this particular genus are indigenous to very restricted zones and are not widely distributed as are some of the other cacti. They are usually associated with *Binghamia acrantha* B. & R., and with *Espositoa melanostele* Borg, and *Neoraimondia*. They inhabit valleys or hilltops wherever drainage is good, and stand considerable moisture during the growing season.

Cutting root readily and plants establish themselves quickly. In my garden they grow rapidly and soon become beautiful specimens much

superior to those found in the wild. The spines become duller in winter, but never entirely lose their brilliant coloring.

None of the Peruvocerei are frost-resistant and they must be protected against cold.

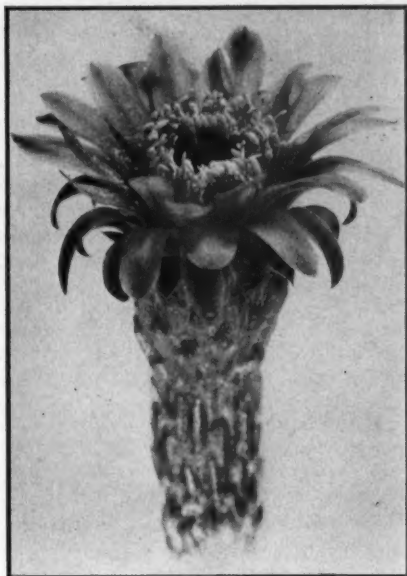
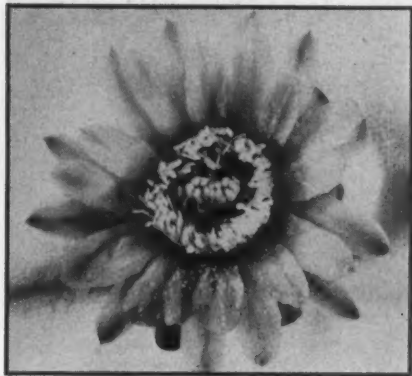
There is no definite flowering period, and the plants may bloom at anytime during the summer. Another peculiarity of Peruvocerei is the non-uniformity of the stem diameters. Instead of forming uniform columns, the stems bulge in various places and resemble hand-stuffed sausages. The size of the fruits varies considerably, depending greatly upon the amount of moisture the plant receives.

#### *Peruvocereus setosus* sp. nov.

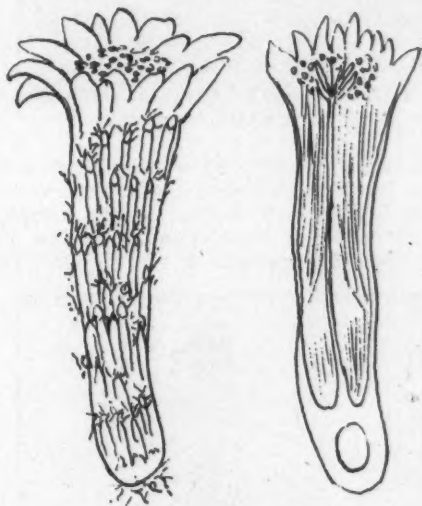
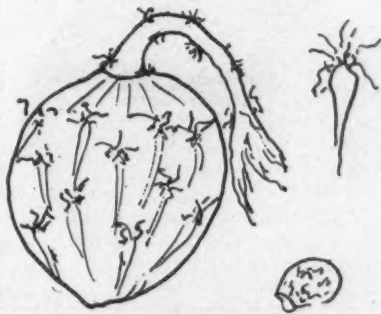
Plantae columnares 1-3 m. altae, ramos 15-25 6 cm. diametro ex basi caudicis emittentes; costae 20-21 depressae pulvinis spinarum 3 mm. latis 4 mm. longis 1.5 mm. altis; areolae tomentosae orbiculares 90-100 spinas et setas patentes ferentes; spinae circa 1 cm. longae spinis centralibus 1-2 circa 2 cm. longis brunneis demum cinerascens; setae ad apices ramorum versus plures 2 cm. longae rubescentes flavae argenteae vel cinerae; flores anguste infundibuliformes segmentibus interioribus circa 24 linearis apice rotundatis, segmentibus exterioribus circa 40 reflexis, tubo 5 cm. longo rubro squamato, squamis apiculatis marginibus squamarum flavis; ovarium atrorubrum ad basem versus viridescens; stamina inclusa filamentis ad basem albis ad apicem versus roseis, anthera oblonga eburnea; stylus inclusus lobis 10-12 circa 5 mm. longis; fructus subglobosus tanquam 4 cm. diametro ad basem viridis ad apicem versus roseum squamatus, squamis 20-30 pilos albos 3-4 mm. longos in axilibus ferentibus; semina circa 1 mm. longa lucida alba.

Plants from 1 to nearly 3 meters in height, columnar, branching from the base and forming groups of 15 to 25 stems; ribs low, 20-21, with small, felted, spine cushions (4 mm. long, 3 mm. broad, 1½ mm. high); areoles about 1 cm. distant, nearly circular, little raised, and filled with short, grayish-white, kinky hairs (under magnification); about 90 to 100 spines and bristles emanating in all directions from the spine cushions; spines 30% yellow, acicular, pungent and about 1 cm. long; 1 or 2 central spines, 2 cm. long, acicular, pungent, reddish-brown fading to gray; bristles 70% over 2 cm. long, flexible, and shaded red, yellow, silver or gray; stems actually not more than 6 cm. thick, but due to the heavy armament of spines and bristles which nearly hide the body of the plants, they seem to approach a thickness of 10 cm.;



FIG. 42. *Pernvocerens setosus* sp. nov.FIG. 43. *Pernvocerens setosus* sp. nov.

epidermis dull, yellow-green; growth of bristles concentrated at the top of the stems where the hairy buds appear; flowers diurnal, opening at about 2 P.M. on one day and closing after 9 A.M. on the following day; flower narrowly funnel-form, limb expanded and rotate, outer perianth segments much reflexed; inner perianth red or rosy-scarlet, tips of petals rounded, linear; outer segments about twice as many as inner ones (40 and 20 respectively), pointed, darker red; tube about 5 cm. long, red, and covered with narrow, raised scales that have over 50, 3 mm. long, glassy hairs in their axils; about an equal number of white and brown hairs; scales edged with yellow and tipped with a minute thorn; white wool at the base; ovary dark red shaded green at the base; stamens and style included; stamens attached above the nectary space, along the tube wall and at the base of the petals; filaments threadlike, pink above, white below; anthers ivory colored, small, narrow and oblong; stigma lobes 5 mm. long, 12 in number, pale green, velvety; nectary space wide and long (5 mm. by 18 mm. respectively) and only slightly fluted; ovary small, with very minute, white ovules that are dull and nearly spherical; fruit subglobose and up to 4 cm. in diameter; color green at base shaded rose-red at the top; flower remains persistent, brownish and covered with white, silky hairs; scales on fruit 1 to 1½

FIG. 44. *Pernvocerens setosus* sp. nov.FIG. 45. *Pernvocerens setosus* sp. nov.

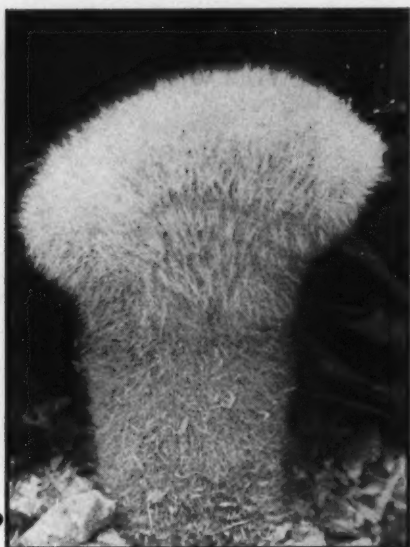


FIG. 46. *Peruvocereus setosus* crest.

cm. distant, minute with withered thorn and with 20 to 30 silky, 3 to 4 mm. long, white hairs in their axils; a magenta stripe extends from the base of the scales towards the base of the fruit; fruit puckered at base of withering

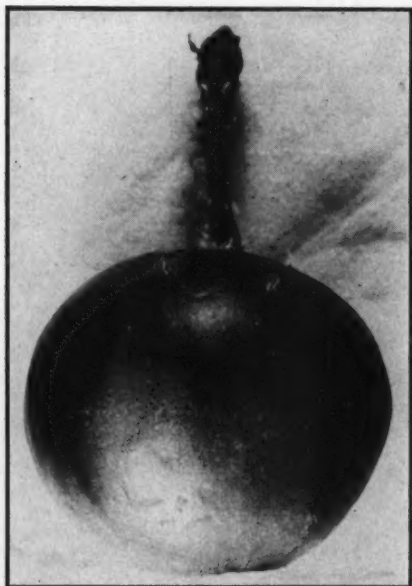


FIG. 47. *Peruvocereus setosus* fruit.

floral remains; pulp white, acidic, translucent, with small, black seeds scattered throughout; seeds shiny, 1 mm. long, white; roots long, heavy, brittle and woody with scaly bark.

Habitat: Desert hills near the coast.

Type locality: Caracoles Hills, south of Lima.

This species is extremely attractive and could not have been overlooked by other Botanists except for the fact that it inhabits canyons off the beaten track. Although a sparse bloomer, the bright coloration of the new bristles makes this plant very desirable. It is often associated with *Binghamia Olowinskianus* Bckbg. and with small, decumbent *Loxanthocerei*. During the winter months, the damp ocean fogs keep the ground moist and numerous wild *Oxalis*, *Tradescantias*, *Amaryllids*, *Loasas*, *Tigridias*, *Begonias* and other small annuals or bulbous plants come into flower. The cacti, however, do not start growth until the dry, hot summer weather arrives.

There is a lot of variation in the coloration of the bristly hairs, some being yellow and others shading towards red.

#### SCRAP BOOK MATERIAL

For members desiring scrap book material, we are offering undoubtedly the largest assortment of illustrations and colored plates of cacti and succulents ever assembled. Contains the following books (all unbound, of course) almost complete: Britton and Rose, *The Cactaceae*, volume 1 and volume 2; Boisservain, *Colorado Cacti*; Werdermann, *Columnar Cacti of Brazil*; Marshall and Woods, *Glossary of Succulent Plant Terms*; Hummel's *Victory Picture Book*; old cactus catalog; and sections from the following: Craig, *The Mammillaria Handbook*; Marshall and Bock, *Cactaceae*; *Succulents for the Amateur*; *Cacti for the Amateur*; *Epiphyllum Handbook*, and miscellaneous excerpts from other books too numerous to list. Price: \$8.00. Sent express collect any place in the U.S.A. (weight approximately 12 pounds).

SONORA SKETCH BOOK—John Hilton, 1947. Anecdotes, stories, and legends of the people of Sonora, the Mexican state just south of Arizona and across the Gulf of Mexico from Lower California. It is a desert country cut with wild canyons and high plateaus. Tells about the quaint customs attending childbirth, the ritual of carrying water, are art of making good tortillas, the bookseller who could not read, and many others. Mr. Hilton also tell of expeditions to the wild Yaqui country, of trips to ghost mining towns, of how he collected reptiles, and how he went birdhunting in the mountains. The book contains a number of his own drawings, the prose supplementing the pictures, and the pictures bringing to life the very quality of sunlight, the feel of the air, and the dignity of the people. Price \$5.10 postpaid. Foreign add 20c.

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FIG. 48

*Haworthia cymbiformis* var. *translucens* Triebner and Poelln. nat. size.

## NOTES ON HAWORTHIAS

By J. R. BROWN

*Haworthia cymbiformis* var. *translucens* Triebner & Poelln. in Repert. Sp. Nov. XLV (1938) 166.

Plant 4-4.5 cm. diam., simple or forming a cluster with age.

Leaves 1.5-2.5 cm. long, 8-15 mm. broad, pale green and translucent above the basal part, both sides of leaves with darker green lengthwise lines, about 8-10 on the face and 8-12 on the back, the lines on the back becoming brownish-red, the middle line on the back often more pronounced, the margins with very minute teeth.

Type locality: Cape Colony: Prince Albert Pass in the vicinity of Knysna.

This little *Haworthia* is the prettiest of the many forms of *Haw. cymbiformis* Haw., with clear, translucent leaves and a dainty appearance.

While described as having minute teeth on the leaf margins, I have failed to observe any, occasionally a leaf is lightly keeled near the tip and on this small keel are a few, scarcely discernible teeth. The lines on the leaves usually remain green under cultivation unless the plant

is exposed to fairly strong light.

This *Haworthia* flowers during March-April in So. California and a brief description of the flowers as observed is given below.

Peduncle simple, slender, 15 cm. or more in length, including the few flowered raceme; sterile bracts few, whitish, membranaceous, broadly deltoid, acute, about 4 mm. long; pedicels becoming shorter upwards, the lower 4-5 mm. in length; bracts 3-4 mm. long, whitish, membranaceous, with a faint brown keel, deltoid, acute; perianth 13-14 mm. long, tube obclavate, 3 x 4 mm. at widest part, creamy-white with greenish-brown lines; segments recurving, obtuse, white, faintly tinged pink, with greenish-brown keels.

This plant is found in Prince Albert Pass, north of Knysna, growing semi-shaded by other vegetation and shaded by the high cliffs on both sides of the pass. It grows 10-30 feet above the bed of the stream on very steep slopes in a very fertile, sandy-clay soil. Conditions are cool and moist in the bottom of this deep kloof, sunlight rarely reaching the plants.

## AFFILIATE NOTES

*Long Beach Cactus Club*

Meeting was held at night in the garden of the Sec'y-Treas. W. S. Bell. The lighting arrangement lent a pleasing atmosphere to the colorful plants in Mr. Bell's garden. J. F. Kaufman showed pertinent color slides to illustrate his talk on California Cacti.

*Heart of America Cactus Club*

The March meeting at the home of L. H. Rose, was well attended. Vice-President R. C. Pickering presented the regular lecture of the meeting. He spoke on his favorite plants, and illustrated his points with photographs. Winner of the true and false text was P. Anderson, who won a *Euphorbia splendens*. *Aloe variegata* was given as a door prize to Mr. McCann. A discussion was held on the trip to Pirtle's Cactus Gardens in Edinburg, Texas, which was made by Robert, Virginia, and Mr. and Mrs. Rose. This garden is undoubtedly one of the finest in cacti and succulents. There are about 1500 species growing in the open ground, and each species is usually represented by numerous plants, for instance, there are whole rows of *Echinocactus Grusonii* ranging from seedlings to wash-tub size.

*Oakland Cactus and other Succulent League*

Monthly meeting was held at the home of W. Andrews. Plans were completed for the Cactus and Succulent exhibits at the spring garden show. Each member made a list of plants available as each plant must be correctly labeled. Thirty specimen plants will be placed in the show in addition to members' collections.

*Oklahoma Cactus and Succulent Society*

Charles Polaski entertained the Society at the January and February meetings with technicolor movie films taken of cactus lands in Old Mexico, the border, in Arizona, and California. The Society furnished 15 dish-gardens for the Red Cross which were placed in the tuberculosis and isolation wards in Will Rogers Hospital. At the March meeting an interesting lesson on small window gardens with the use of succulents was enjoyed. Ladislaus Cutak made a surprise visit on his return trip from Old Mexico, and it was a great privilege to meet him.

*Detroit Cactus and Succulent Society*

Meeting was held at the White House, Belle Isle, with twenty-five members present. Final discussion of the exhibit at Convention Hall took place. Plans were formulated for a cactus show at the White House from April 6 to April 13. From the Society's monthly bulletin:

## HARDY CACTI

There are some cacti that will survive our winters here in Michigan. Some of them have been growing in gardens for the last seven or eight years. They require little care, but must be planted in a well-drained spot. Such a spot may be made by elevating the soil so that the surplus water will quickly drain off. Cacti that will not winter-kill are: *Opuntia fragilis*, *O. rhodantha*, *O. polyacantha*, *O. mesacantha*, *O. tortispina*, *Echinocereus viridiflorus*, and *Neobesseyia missouriensis*. These plants grow well in gardens and harmonize with the rocks and other plants.

*Des Moines Cactus and Succulent Society*

At the monthly meeting held in the City Greenhouse, five new members were initiated. Interest is at a peak, and there were twenty members in attendance. Mrs. Knode gave the lecture of the meeting:

## OUTDOOR PLANTING

Most species of cacti and other succulents will bene-

fit by being placed outdoors in summer, and preparing such a garden will prove pleasurable to the gardener.

Choose the sunniest part of the garden and first of all remember to have good drainage. If there is a location on a hill facing south, so much the better. If not, build the soil up about a foot above the surrounding ground and have at least a foot of drainage of broken rocks or cinders below that. The soil should be half sand and half heavy soil with a liberal amount of lime mixed in. A bushel of charcoal will help keep it sweet and also tend to prevent disease.

Always mound the soil having the center highest. If making a bed eight feet in diameter, have the center two feet higher than the edge which is one foot higher than the surrounding ground. As for the wall, this can be made from most anything. Rocks may be used in different colors and tied together with cement which in turn can be sprinkled with powdered stone in order to hide the cement, or better still, the rocks can be placed close together, filled in with soil, and sedums, sempervivums, etc., planted in the crevices.

In planting cacti, the largest specimens should always be planted in the center and so on down to the edge where the small ones can be placed between rocks to see them plainly. Rocks can also be placed among the cacti, helping to keep the plants upright.

Cacti may be left in pots and the pots sunken in the soil with rocks placed around each pot to help hide it. This can be done so cleverly that it would take a sharp eye to notice the cacti were not planted in the soil itself. The advantage of such a method lies in the fact that the pots can be taken up in the winter, placed in the basement and the plants in no way disturbed. (The speaker always does this with *Stapelias* and *Huernias*, because their flowering season begins when it is time to bring the plants indoors, and their blooming is thus undisturbed.)

A few cacti like some shade, such as *Mammillaria hemisphaerica*, and it is advisable to have a large *Opuntia arborescens* to plant them under. Also a few like much water, and with these it is advisable to plant them in one corner where they can have as much as they need without endangering the rest of the collection. Water which will make an *Acanthocereus pentagonus* thrive, will kill an *Echinocactus horizontalis* in a few weeks.

Putting rocks between the cacti and covering the top soil with limestone chippings or rough sand after the plants are placed, will prevent heavy rains from splashing soil onto the plants. Colored rocks and weather-beaten stones will make for added beauty.

There are only a few cacti that are perfectly hardy here in Iowa. *Opuntia tortispina* (the Club flower), is one of them, and *Opuntia fragilis* another. Of the Hedgehog and Ball types there are several that will stand sub-zero winters, even as cold as 25 degrees below zero, but they are not hardy to the combination of cold and moisture. If they can enter the winter season in a dormant state, and not full of water from the fall rains, they will successfully withstand the rigors of winter. If they are full of water they will freeze, crack open, and rot. A list of species which prove hardy if properly inured is: *Echinocereus aggratus*, *E. gonacanthus*, *E. viridiflorus*, *Pediocactus Simpsonii*, *Opuntia arborescens*, *O. fragilis*, *O. humifusa*, *O. polyacantha*, *O. rhodantha*.

EDITOR'S NOTE: This is the type of information that should comprise *Affiliate Notes* instead of the social functions that are of little interest to the majority of our readers. Tell us about your plants and their culture.



## DO YOU KNOW THE BROMELIADS?

Part VI

By MULFORD B. FOSTER

There is a resemblance between *N. farinosa* and *N. Carolinae* but the leaves of the later species are narrower and longer and with a bright, shiny, green texture.

*Neoregelia tristis* is one of the smaller types of the genus. It is a slow grower, but if kept in full light the rather small compact rosette is quite showy with its semi-stiff leaves peppered well with red spots.

In 1940 I brought back from Brazil a phase of this species which differs in both shape and color; it is quite decorative with its olive-grey-green leaves sprinkled with red-brown blotches. The plants of this species seldom exceed eight inches in height.

*Neoregelia spectabilis*, probably the oldest horticulturally known member of this genus was formerly listed as *Argelia spectabilis*. It is a spectacular beauty, having grayish banded leaves on the underside, while a beautiful green leaf with cerise-red tips is on the upperside. It is not surprising that this bromeliad has been popularly called the "Painted Fingernail" plant because the bright leaf tips definitely resemble a lady's painted fingernail.

Because of the stiff, sturdy leaves, this brome-

liad can successfully be used as a "living flower vase" by placing cut flowers between each leaf section; water is naturally held at the base of each tight fitting leaf and thus makes a perfect receptacle.

*Neoregelia marmorata* has appropriately been called the "Marble Plant" because its gorgeous leaves of green and red have that marbled effect, perfected as only nature can. It is a native of Brazilian jungles and seeks low branches and plenty of light.

This plant has seldom reached collections in its original species form, but generally as a hybrid crossed with *N. spectabilis*. This cross is a much larger and more vigorous plant than the species *marmorata*. It is a species native to the cooler sections of southern Brazil and like *N. spectabilis* stands quite cool weather. In fact I have often seen ice form in their leaf cups without killing the plant, although I wouldn't deliberately subject the species to any long lasting cold weather.

## NIDULARIUM

Little wonder that the *Nidulariums* have long been known to horticulture for the early collectors did not have to climb the tall jungle trees



FIG. 49

*Nidularium innocentii variegata* is a showy, delightful Bromeliad, well known in Europe. (From "Brazil: Orchid of the Tropics" by permission of Jacques Cattell Press.)



FIG. 50

*Nidularium fulgens*, a full rosette of delicately spotted leaves, capped by a glowing red center of bracts which holds a cluster of purple and white flowers.

to find them; they are invariably found near the ground on old trunks, stumps or lianas. Thus, coming from the moist darkness, some of the *Nidulariums* are not too successful as house plants; they would not thrive in a dry home atmosphere as do many of the *Aechmeas* and *Neoregelias*. But for anyone who has a conservatory or the facilities for keeping a plant in moist shade, the *Nidulariums* are a beautiful addition to any plant collection. Mine seem quite happy under a slat bench.

*Nidulariums* are most interesting during and following the blooming period, and like the *Neoregelia* and *Canistrum*, *Nidularium* flowers appear down in the center of the rosette. As with many other bromels the layman sees the effect of the whole inflorescence more often than the individual flowers, and generally the color impression is from the bracts; the blooming period extends over a number of weeks, but the bracts may remain in color for months.

*Nidularium innocentii* and its form *variegata* are plants that were included in almost every collection both in Europe and in this country in days past. Now only a few can be found in the botanical garden collections.

The typical form, of course, is plain green but the variegated form has always been the showiest and most desirable.

*Nidularium amazonicum* is another *Nidularium* frequently found in old collections but is almost out of circulation now. It is perhaps the

most beautiful *Nidularium* with foliage colored a dull purple tinted with green. At blooming time brick-red bracts enclose pearl white flowers completing a most effective color scheme.

Growing natively it is found generally on the leaf-mold covered ground of the shady jungle and requires this moist shade in horticulture.

*Nidularium fulgens* is a vigorous, many leaved rosette-shaped plant, which with its prominently serrated leaves commands attention whether it is in bloom or not. The glossy light green leaves subtly flecked with dark green spots is unusually attractive and is a perfect setting for its final display of color in the spring when dark blue, white edged flowers appear in the flower head of brilliant cerise bracts.

*Nidularium rutilans* is a faster maturing species with fewer leaves and less conspicuous leaf serration but it is similar in texture to *N. fulgens*. The flowers are orange-red surrounded by scarlet-cerise bracts.

*Nidularium billbergioides* at first glance would impress one as being a *Canistrum* for the flower head appears on a long stem which rises six to eight inches above the center of the plant. Its flowers are white and the bracts orange, while the leaves are a lovely cream-green. This is an excellent grower which requires less moisture than most of the *Nidulariums*. This will be a charming addition for any collection as soon as it becomes more plentiful.

*To be continued*

## REVISIONS IN THE TAXONOMY AND SOME NEW COMBINATIONS IN CACTACEAE

By W. TAYLOR MARSHALL

Part III

### *Reasons for this classification*

The genus *Pereskia* contains leafy plants with stalked, rotate flowers, the ovaries of which bear foliaceous scales. In two of the species the ovary is a primitive hollow in the base of the pistil while in all of the other species the ovary is a true chamber (see "Die Entwicklungslinien der Kakteen," Berger, page 5, figs. 2, 3 and 4, also "Cactaceae," Marshall and Bock, page 9, plate 2).

These characters justify a sub-generic separation but not a generic one, therefore *Rhodocactus* is rejected as a genus.

The genus *Opuntia* is exceptionally well defined and the sub-genera based on stem shape is an aid to location of any given plant in the keys, but to make a generic separation of stem shape is no more justified than would a similar separation be in, say, *Trichocereus* if we should make the globose forms into one genus and the columnar forms into another. For one thing there can be no sharp separation between the globose and cylindrical stems of *Opuntias*, as many species have both globose and cylindrical stems on the same plant while others have cylindrical and flattened stems on the same plant.

Therefore *Austrocylindropuntia*, *Tephrocactus*, *Corynopuntia* and *Brasilopuntia*, all based primarily on stem form, are confusing rather than helpful and should be rejected. *Grusonia*, based on *Cereus Bradianus* Coulter, was separated from *Opuntia* because all but the flowering areoles were without glochids and the long tubercles were confluent to form ribs. The first character is not constant as non-flowering areoles with glochids are occasionally seen in the type species and are usual in the other species, and many species of *Opuntia* share the confluent tubercles. *Grusonia* Reichenbach should therefore be regarded as a synonym of *Opuntia*.

*Brasilocereus* Bckbg. was based on *Cereus phaeacanthus* Guerke, a species assigned to the genus *Monvillea* by Werdermann because the ovary and tube bear scales, naked in their axils and the perianth is withering-persistent.

*Austrocephalocereus* Bckbg. is based on *Cephalocereus purpureus* Guerke, *Coleocephalocereus* Bckbg. on *Cereus fluminensis* Miquel, and *Micranthocereus* Bckbg. on *Cereus polyanthus* Werd., all species now assigned to the

genus *Cephalocereus* and easily identified with that genus so any separation would prove confusing rather than helpful.

*Suopilocereus* Bckbg., based on *Cereus Russellianus* Otto., *Mitrocereus* Bckbg. based on *Pilocereus chrysomallus* Lem. (*Pachycereus* B. & R.) and *Neobuxbaumia* Bckbg. based on *Cereus tetazo* Coulter are all based on species which naturally fall into the genus *Pilocereus* in Berger's sense and they are so considered by botanists who best know them. To accept Backeberg's genera would serve no useful purpose and would further confuse students.

Backeberg's genus *Gymnanthocereus* was based on the same generic characters as *Browningia* B. & R. viz: scales on flower tube and fruit naked in their axils. *Cereus chlorocarpus*, its type, should therefore be placed in the genus *Browningia* as should *Cereus microspermus* Werd. & Bckbg., also put into his genus *Gymnanthocereus* by Backeberg. This species flowered in my garden and was definitely a *Browningia*.

The new combination *Browningia chlorocarpa* (H.B.K.) Marshall was made in *Cactus and Succ. Journ.* XVII:114. 1945. There remains to be changed:

*Browningia microsperma* (Werd. & Bckbg.) Marshall, comb. nov.

*Cereus microspermus* Werd. & Bckbg. 1931

*Jasminocereus microspermus* Bckbg. & Knuth, *Kaktus A.B.C.* 210. 1935

*Trichocereus microspermus* Borg, *Cacti* 141

*Anisocereus* Bckbg., type species *Cereus lepidanthus* Eichlam. The type agrees with the specifications for *Pachycereus* except in the one minor point that the scales of the ovary and tube are dry, not fleshy as in the other species. A separation is therefore unnecessary and confusing.

*Philippocereus* Bckbg. Type species *Cereus castaneus* Sch. is based on a similar slight difference in one species. Of the four species in this genus, three bear wool in the axils of the scales on ovary and tube, one of them also has silky hairs amid the wool (*E. iquiquensis*) but *E. castanea* has stiff bristles amid the wool. This separation is also unnecessary and confusing.

*Weberbauerocereus* Bckbg. is based on *Cereus fascicularis* Meyen (*Cereus Weberbaueri* Sch.)

of which Britton and Rose in "Cactaceae" II: 142 says: "The flowers of this species differ from those of the typical *Trichocereus* in that they are very slender, bent near the base, and have short perianth-segments." Their illustrations of the flower and fruit (Fig. 206, 207, page 141) compare favorably with the illustration of the flower and fruit of *Trichocereus Terscheckii* (Fig. 203, page 140) except that the tube is more sharply bent than in *T. Terscheckii* although not more so than in *T. pasacana* (Fig. 193) and the perianth segments are shorter than in *T. Terscheckii* but not shorter than the perianth-segments of *T. candicans* (Fig. 195). Therefore no clear separation is possible and *T. fascicularis* should remain in the genus *Trichocereus*.

The genus *Roseocereus* Bckbg. is based on *Eriocereus tephraanthus* Ricco., a species so typical of the genus that it cannot be separated.

*Thrixanthocereus* Bckbg. is synonymous with *Facheiroa* B. & R. as both are based on the same generic characters. They should be united under the older name *Facheiroa*.

*Pseudoespostoa* Bckbg. differs from *Espostoa* in branching from the base, not from above, a purely specific character, and in its rounded fruit, while that of *Espostoa* is oval. Borg (Cacti 112) rejects this separation as mere hair-splitting.

*Haageocereus* Bckbg. was erected for the species *Cereus decumbens* Vaupel (*Borzicactus decumbens* B. & R.), the only night-flowering species in the genus *Binghamia* B. & R. The generic characters were: nocturnal flowers borne near the top of the stem, tube slender 8 to 12 cm. long with a broad limb fully expanded, the tube bearing small scales and a few hairs. Later he added *Cereus pacalaensis* and *Cereus acanthus*. When Setchell and Dawson (Proc. Nat. Acad. Sc. XXVII:8:276. 1941) called attention to the prior use of *Binghamia* by Agardh for a genus of Algae, thus rendering invalid Britton and Rose's genus *Binghamia* for the cacti, Werdermann emended the genus *Haageocereus* to include the former *Binghamias* and transferred *Binghamia acantha* to *Haageocereus*. The name *Haageocereus* is therefore valid and *Binghamia* B. & R. becomes a synonym of it.

*Thrixanthocereus* Bckbg. based on *T. Blossfeldiorum* has the same characters as those on which the genus *Facheiroa* was based except for the color of the wool and spines in the cephalium and this is a specific rather than a generic difference. It should be united with *Facheiroa*.

*Pseudoespostoa* Bckbg. is rejected by Dr. Borg (Cacti 112, 1937) who even questions the

validity of the species *P. melanostele* which he thinks is only a form of *Espostoa Dautwitzii* "with dark green stems, less numerous ribs, and more woolly hair in tufts, and only slightly matted."

*Cleistanthocereus* Bckbg. based on *Borzicactus Fieldianus* B. & R. Bckbg., *Loxanthocereus* Bckbg. based on *Cereus acanthus* Vpl. and *Seticereus* Bckbg. based on *Borzicactus ventimigliae* Ricco. all come within the scope of *Borzicactus* as conceived by Riccobono and no good purpose is achieved by their erection.

*Morawetzia* Bckbg. was erected by him to house a species of *Oreocereus* whose flowers are borne higher on the plant than is usual with the other species but sometimes the difference is negligible as I pointed out in an article in the Journal of July, 1943.

The genus *Aylostera* Bckbg. includes species of *Rebutia* with large pistils which entirely fill the tube while some species have thinner pistils. Again the hair-splitting is unnecessary and the genus *Aylostera* should be disregarded.

*Mediolobivia* and *Acantholobivia* both by Backeberg, represent unnecessary line-drawing within the genus *Lobivia*, as *Pseudolobivia* does in the genus *Echinopsis*, and all three should be abandoned.

*Strombocactus* B. & R., *Obregonia* Fric, *Encephalocarpus* Berger, and *Roseocactus* Berger share in common the factors of horny tubercles, rosette arrangement, relatively small, centrally borne flowers from the wool-bearing areoles and smooth or nearly smooth fruit almost hidden in wool. I have previously suggested that they be combined (Journal IX:77. 1937) and I am now combining them in a separate article in the Journal.

The genus *Navajoa* Croizat based on *N. Peeblesiana* (Cactus Journal XV:88, 1943) was noted by its author as greatly resembling *Toumeyia* B. & R. except that the few, minute, naked scales on the flower tube in *Toumeyia* were not present and the fruit was not known. It would seem to be most convenient to place this species in the genus *Toumeyia* together with four species assigned first to the genus *Strombocactus* by Backeberg and Knuth but later put into Backeberg's genus *Turbinocarpus*, and to make the few revisions in the generic description of *Toumeyia* necessary to include them as follows:

*Toumeyia* B. & R. Cactaceae III:91. 1922  
emended Marshall 1947

Plants very small, globose to short cylindric, the areoles borne on low, rounded tubercles, usually spirally arranged; spines more or less



flattened, sometimes papery, always rather soft and not pungent; flowers central, funnelliform to campanulate, white to pink, the ovaries bearing a very few or no scales, but scales when present, naked in their axils; fruit smooth, globose, dry or nearly so.

Type species *Mammillaria papyracantha*

#### Species:

*Toumeyia papyracantha* (Eng.) B. & R. 1922

*Toumeyia Peeblesiana* (Croizat) Mar.

*Toumeyia lophophoroides* (Werd.) Mar.

(*Thelocactus lophophoroides* Werd., *Strombocactus lophophoroides* Knuth)

*Toumeyia macrobele* (Werd.) Mar.

(*Echinocactus macrobele* Werd., *Strombocactus macrobele* Bckbg.)

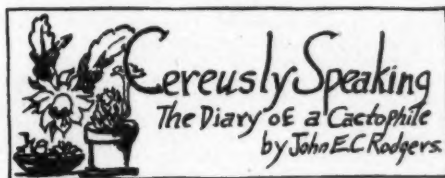
*Toumeyia pseudomacrobele* (Bckbg.) Mar.

(*Strombocactus pseudomacrobele* Bckbg.)

*Toumeyia Schmiedickeanus* (Böd.) Mar.

(*Echinocactus Schmiedickeanus* Böd., *Strombocactus Schmiedickeanus* Bckbg.)

To be Continued



May 1. Fourth bloom  $4\frac{1}{4}$  inches in diameter open on *Cereus Mallisonii*. Blooms "hooded" like *Aporocactus flagelliformis*, one parent of this hybrid. Arresting rose-pink with purplish high lights on outer petals (*Heliocereus speciosus* strain). Bud  $4\frac{1}{2}$  inches long before opening. Tube spiny. Grows best grafted but will grow on own roots in good soil. *Aptenia cordifolia* ornamental with its small purple flowers. Checked *Opuntia humifusa* and *O. rhodantha* in open beds. Wintered poorly. Could be counted "hardy" in drier locality. *Stenocactus erectospinus* growing. Last three were gifts of E. E. Grieb of Philadelphia.

May 2. Harvested and planted seeds from *Aloe longistyla* x *variegata* variety *ausana* I made March 3. Only about six looked viable but planted all ten. Blooms on *Senecio stapeliaeformis* sending up single florets from Compositae flower. More will follow until whole flower resembles an orange-red dandelion. *Euphorbia submammillaris* hybrid (*E. Pfersdorffii*), from the hand of Professor Otto La Porte, developing crested offshoot.

May 3. Cool— $46^{\circ}$  at 8 a.m. *Othonna crassifolia* (another Compositae) in bloom. Long stems with single yellow flowers. Look like they're wilted in late afternoon but open following day. Pretty. Makes good hanging plant for window box or basket. *Epiphyllum Ackermannii* stem rooted, and planted in coffee can of rich soil, bloomed. I use mature stems and root in box of sand with underheat. *Sclumbergera Gaertneri* kept semi-dormant until other two bloomed. Kept it on floor of greenhouse. Extends blooming period of this "charmer."

May 4. Rain! First in two weeks. Gerry, my wife,

wore shoulder corsage of *Cereus Mallisonii* and *Epiphyllum Ackermannii* and two gardenias on dark blue, taffeta dress. Striking? Helped raise morale of High School chorus she directed. *Cereus peruvianus* 2 feet tall, budded in two places; in 6-inch pot. Columnar cacti scarcely ever bud for us greenhouse owners here along the lakes. Need room to grow tall. Mine should be reotted. Can't while it's budded, and probably it'll stay in same pot, anyhow.

May 5. Made up soapy "Black Leaf 40" solution and soaked soil of *Echinopsis albiflora*, *Opuntia reirorsa* and *Malacocarpus Hennisii*. Ants working in pots. Root-mealies? Use strong solution—tablespoon to quart of water. Never use whale-oil soap! Fels-Naphtha does as well for me. Melt cake in quart of water, then use small amount.

May 6. Wren (*Troglodytes aedon*) in cactus house. Seems to prefer warmth and security of my glass enclosure with free pickings of spine-bugs, pill-bugs, etc., for her daily fare. Hops through under partly open door. Still undecided whether to resume sand beds and sink pots in same or set on moist soil under shelter of grape arbor. Results good both ways. A few sulk no matter what.

May 7. Gave good soaking to all the "can-stand-its." Temperature has been  $110^{\circ}$  in greenhouse with door and ventilators open several times recently. Eight days of sunshine since April 25. Euphorbias leafing out again. Keep leafy types on dry side during cool weather. Not ordinarily deciduous, I understand. *E. bulbalina* full of flowers most of time. Dry flower stems give it a "bush-heap" effect.

May 8. *Pachyphytum compactum* bloomed. (Succulents for the Amateur, figure 174). Growers are not as lucky as they used to be with native *O. compressa* since well-meaning friends brought "shot-disease" infested *O. Lindheimeri*. Seedlings of *O. compressa* seem to be immune from infested parent plant, however. *Euphorbia abyssinica* 14 inches high. Grows well all summer. Got it from Eugene Ziegler, when said cactophile was "rari-avis."

May 9. *Gymnocalycium plantense* bloomed. Brown Wood-Thrush (*Hycocichla mustelina*) in greenhouse. His black eyes showed little alarm at my intrusion. He took his time but got out with no harm done. Don't care if insectivorous birds enter, but I would regret if a berry-eater devoured some of my attempts at hybridization.

May 10. Both buds aborted on *Chamaecereus Silvestrii* (Peanut Cactus). Cloudy weather? Too much water—or too little? Last year buds developed in same location under same general conditions—only eight more days of sunshine. Houghton's Cactus Book gives sun medium, soil humus, and moisture damp. Have used both glazed and porous pots. Plants bloomed in both. I've come to the conclusion that too much sunlight with high temperatures and poor ventilation causes buds to abort on *Echinopsis*, *Chamaecereus*, and *Selenicereus*.

May 11. Set Epiphyllums, Pereskias and several other succulents that had been stored in small room off cactus house under grape arbor. *Gymnocalycium Mihanovichii* seedling (four years old) full of buds. *Nyctocereus serpentinus* and *Selenicereus spinulosus* buds now 1 inch long. Both usually bloom first week in June and finish up in July.

May 12. Lost sickly *Malacocarpus Bruchii* I bought at local florist shop. Survived long enough to make me regret its passing. *Consolea falcata*, similar to *O. brasiliensis*, growing. *C. rubescens*, 3 feet tall and still growing. Took off several side shoots

and rooted them for trading stock. Like most of the *Opuntia* clan, it roots easily in any soil. *Consolea falcata* is more difficult. Stake to cutting tied to it and only let it touch the soil.

May 13. Unnamed "Cooperi type" of *Epiphyllum* bloomed. Buds spineless. White with outer sepals brownish red. Six-inch rose-pink with 5-inch cup. Outer petals turn back. Stigma and anthers white. Original plant brought to this country by a sea captain who collected *Epiphyllums* in Germany and France, according to the late W. M. Fischer, overseer of E. S. Burke Estate greenhouses. Planted seeds from *Wilcoxia viperina* in pan-of-peat-soil. Stems of parent plant withered after bearing three fruits.

May 14. *Cyanotis somaliensis* (half succulent) bloomed. Blooms pinkish purple. Shows its lily relationship. Looks like a hairy *Tradescantia* (wandering Jew). *Pereskiaopsis diuuetii* burned by wind and sun losing some of its leaves under grape arbor. *Astrophytum myriostigma* budded.

May 15. Humidity 90%. *Mammillaria multiceps* sulking in humus soil. Mixed sand in soil and repotted. *Ceropegias* in bloom. *C. stapeliaeformis* most spectacular of the genus I have, but *C. radicans* in John Bock's collection is daring in its color scheme: banded, 3-inch, green with purple, which dwarfs *C. Woodii* and *C. Barkleyi*.

May 16. Pink *Epiphyllum* of May 13 closed. Have tried to buy lath to make sectional shades for greenhouse. White-wash is too dense for our lake "smog." Cloth shades on the inside let heat into greenhouse and keep out light on dark days. Lath shades could be built so they would roll up with ropes.

May 17. Community planting of cacti and succulents I've been experimenting with, is excellent. Difficult to handle 14-inch pots when I wish to examine specimen. Take up more room on benches, too. Keep root moisture more uniform, and root growth stimulus going strong. Protects roots from rapid temperature changes of smaller clay pots. I recommend it for its advantages, but it's not for me. I'm and experimenter and separate plant viewer.

May 18. Set part of plants that were stored under the benches for the winter in the protection of grape arbor. *Opuntia compressa* and five varieties budded. Have not lost one plant. Bed is well-drained after the test it had this spring. Favorite spot for ants. Used strong "Black Leaf 40" solution. Poured into holes I punched in hills. Can't use cyanogas as it injures roots when soil is moist. "Sheps" is good but I like to use it for visible bugs when I can see "the whites of their eyes."

May 19. Have *Ceropegia Cofforum* rooted. Trade from John Bock. Light green leaves in pairs along green stems. Turns red in full sun. Prolific grower. Best clipped above leaf axils to force branching. In fact I do this to all the wandering vines of the *Ceropegia* genus. Use end cuttings as source of new plants. A small percentage does not root, however. Midwest cactus and Succulent Society met at Fred and Abigail Hinkley's, E. Cleveland home. Have window gardens facing west and south. Old etiolated look of their former dark, apartment-grown plants gone. If you can't raise succulents and cacti in your windows without etiolation I say your house is too dark for humans, too.

May 20. *Mammillaria ortegae* bloomed. Red flowers with slight trace of fuchsia at tips. Friends called it "red." Spine arrangement of three to five spines makes me think it is a variety of *M. kewensis* or *M. phaeacantha* without the white felt about top nipples.

*Selenicereus Donkelaari* and *S. pteranthus* budded. Buds on *Cereus peruvianus* have stopped growth. New base offset started. Can't support both reproductive and branching disturbances at once, no doubt, and has cut off nourishment to buds.

May 21. My pet peeves are the catalogs that show only plants that I have. There ought to be other growers than Johnson that have lists for collectors.

May 22. *Oreocereus celsianus* and *O. Trollii* growing. *O. Celsianus* has long since out-distanced *O. Trollii* for rapid growth. *O. Trollii* is the slowest of my columnar cacti. *Oreocereus Celsianus* variety *Bruennowii* is slendered with fewer ribs. Long brown spines and mottled brown hairs from the top areoles.

May 23. 74° at 8 p.m. *Malacocarpus mammulosus* bloomed. Bloom gets larger by the second day. Satiny yellow with red stigma. So far yellow with red stigma is my only type of bloom.

May 24. *Gymnocalycium platense* flower closing which opened May 9. One of the best for long lasting flower. Profuse bloomer if kept in small pot of rich well-drained soil. Root system is small in comparison to other species I have. Last of the *Schlumbergera Gaertneri* blooms opened on plant on floor of greenhouse mentioned May 3.

May 25. Had to water plants third time since May 20. Ground too wet to work outside. *Opuntia compressa* buds big enough to show color in some. Like plenty of limestone and old plaster in gravelly soil. I've never had trouble with them but I know several cactophiles who have.

May 26. Have columnar cacti that were seedlings in 1936. They are growing but I do not expect them to bud even with the best care I can give them. *Cereus azureus* and *C. peruvianus* which are budded are plants from cuttings. Gave the columnars a top dressing of dried (2 years old) chicken manure and top soil on sandy side. Need plenty of water in porous pots. I've several in glazed pots and they do better but old dread to move plants that are doing well is again upon me.

May 27. Agaves growing under benches. Do not show any etiolation. Do not put them out here until hot weather arrives, I think they do better. Still keep them partially starved to hold to my size to handle in greenhouse.

May 28. *Parodia sanguiniflora* budded. Bud on *Nyctocereus serpentinus* 5 inches long. Three other buds also growing. Plant has two 4-foot stalks. Has had top dressing of chicken manure for last two summers.

May 29. Two blooms on *Parodia mutabilis*. Yellow with reddish tinge in throat, 2½ inches in diameter. Pretty against light orange spines with dark tips. *Gymnocalycium anisitsii* bloomed. Slight yellowish tinge to white flowers. Never opens flat. Compared with *G. Mihanovichii*; it is not the same, as some suppose.

May 30. *Gymnocalycium Damii* budded. Plumps up when it gets enough water. One I own has eight slightly tubercled ribs while Britton and Rose (Volume III, page 163, figure 175) shows 10 ribs definitely tuberculate. Blooms light pink. Pretty and good window plant as are all *Gymnocalyciums* that I own.

May 31. *Cotyledon terebinthifolia* growing but still shows four bloom stalks it had were too much of a drain. *Astrophytums* have resumed growth. Gave manure mulch early last fall. Watered plants thoroughly every three days since spring has arrived. Yea, my knowledge of Xerophytes waxes weak at times and I must repair to my books for inspiration.



# SPINE CHATS

LADISLAV CUTAK



During February and March I had my share of thrilling experiences in Mexico. Being far removed from a typewriter and other conveniences of a "civilized" world I had no opportunity to send in my monthly contribution for this column last month. Experiences, such as I enjoyed and shared with my companions, can only be derived in a country where such wonderful scenic attractions, copious fauna and flora, salubrious climate, and amiable peoples are prevalent. Certainly, there were many inconveniences encountered but what would the life of a plant collector be without them?

In the past several years I have gone on many expeditions into picturesque desert regions, covering many thousands of miles, but this 1947 trip eclipses everything undertaken before. Nearly every conceivable method of transportation was employed to accomplish the task I had planned to carry out in Mexico. I rode in creaky buses, always packed with people and merchandise; it was nigh impossible to budge an inch. Once, on the way to Tuxtla Gutierrez from Ocozocoautla in Chiapas, I stood for more than an hour in such a cramped, stooped position that my legs were practically paralyzed and I had to rub the limbs vigorously to bring back circulation of blood. Another time, on a second class bus out of Tehuantepec, our vehicle shook so violently over a washboard section of road that my tonsils were forever hitting each other and the flesh on my back felt as if it was being pricked by thousands of needles. I rode on antiquated trains loaded with passengers and produce of every description and was often astonished and amused at the amount of things that rode "free" with each passenger ticket. I rode in trucks and cars with *chofers* who sped over rough mountain roads, up and down awe-inspiring canyons, mostly with a prayer on my lips and a heart far removed from its rightful place. But the most thrilling adventure was the horseback ride (pardon me, I rode a mule!) to the native haunts of the beautiful Golden Ball Cactus, *Echinocactus Grusonii*, on the Queretaro-Hidalgo border. In spite of all my previous trips I was never on an equine before except to have a picture taken in the long ago, but this trip merits a feature story which I shall save for you later. However, just to give you a preview of the thrills it offered, picture a neophyte horseman riding over the roughest kind of terrain imaginable and then coming to the brink of a frightsome canyon, some 1300 feet deep, which must be negotiated before he can attain his goal of seeing the spectacular Golden Balls. With eyes that must have appeared very popped, gazed down the treacherous zigzag trail skirting the precipitous walls and tried to follow the stony path to the canyon floor below. My immediate thought was to dismount and continue the journey on foot but was prevailed upon by our guide who beckoned me on, assuring me to place my confidence in the animal which was destined to deliver me safely to the bottom, but only after the most thrilling ride in my career. Two days in the saddle and thirteen hundred feet of dizzy descent is quite a feat for a fellow first time on a mule and although I can now qualify for a daredevil movie job don't think

that I didn't shiver at times! If any of you readers want a thrill real bad let me suggest this trip to the Barranca de Vista Hermosa. I guarantee, you won't forget it! The journey was well worth the adventure. We saw some large Golden Balls, four and a half feet tall, surrounded by additional spiny spheres that would make superlative specimens in botanical collections.

Every trip we made was filled with hardships of one kind or another, but each had its reward, too! Take for instance the trip to the Barranca del Libro in Hidalgo. The going was tough, particularly on the return trip, but we saw thousands of *Cephalocereus senilis* with long flowing silvery hairs covering 18 to 30 feet stems. Did I say thousands? You bet I did and without exaggeration. The Old Man grew on very steep slopes and they'll be there for a long time unless some natural catastrophe will wipe them out. Here man is unlikely to despoil the hillsides because it is too dangerous an undertaking. Several strenuous excursions were made in the Isthmus of Tehuantepec where a full month was spent exploring regions hardly touched by a cactologist. The most outstanding was a four days' march through uninhabited, hilly, semi-arid country in Oaxaca which netted one new cactus, to be described soon. No other trip was so arduous as this one. Panting, puffing, sweating and sliding continuously our little group pushed ahead under the most trying conditions imaginable. We were practically without food, subsisting chiefly on totopos (dry, crisp tortillas), black coffee and cocoa because the hunter who volunteered to accompany us failed to shoot any worthwhile game during the entire time in the wilds. Although hunger, blistered feet, tired limbs, insect annoyance and the hot sun caused much discomfort it was the lack of water more than anything else which contributed to my suffering. However, all these physical distresses were forgotten as my eyes focused themselves on some scraggly shrubs growing on the steep slopes of a gorge at the base of El Arenal. Without a doubt this shrubby cactus with three-angled stems and greenish white flowers was new,—not yet known to literature or cultivation. But this will be another story to look forward to.

A trip, equally as arduous as the above, was the one undertaken into the heavy jungle that surrounds Pico Carrizal in Chiapas. We saw the cave which Dr. M. W. Stirling of the Smithsonian Institution visited on his last archeological expedition and which he so aptly describes in the February, 1947, National Geographic Magazine. Instead of penetrating the subterranean chambers, littered with pottery vessels and incense burners of the ancients, we worked the sides of the limestone hill and found an astonishing array of exotics, including a deeply-lobed *Epiphyllum* which appears to be an undescribed species.

My seven-week sojourn in Mexico would not have been as pleasant and profitable without the help, generosity, time and patience of such staunch friends as Tom MacDougall, Wilbur Barker, Dr. Juan Iwerson, Rolf Schaur, Fernando and Carolina Schmoll, Gunther Boker, Christian Halbinger, H. W. Wegener, Dr. and Mrs. H. A. Geitz, and many others. To all of these I extend my gratitude.

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